Development of parental competence scale in parents of children with autism

Mohammadi, Fateme; Rakhshan, Mahnaz; Molazem, Zahra; Zareh, Najaf; Gillespie, Mark

Published in:
Journal of Pediatric Nursing

DOI:
10.1016/j.pedn.2019.04.006

E-pub ahead of print: 18/04/2019

Document Version
Peer reviewed version

Development of Parental Competence Scale in Parents of Children with Autism

Abstract

Purpose: The purpose of this study is to develop and psychometrically of parental competence scale in parents of children with autism.

Design & Methods: This mixed-methods design with a sequential exploratory approach was conducted in May 2017 until June 2018 in the south of Iran. In the first phase, a conventional content analysis method was performed with the participation of 16 parents of children with autism. Interviews were held in the autism association offices in an urban area of Iran. In the second phase, validity and reliability of this instrument were assessed with 300 parents of children with autism.

Results: During content validity testing, 12 items were deleted. Content validity ratio and index were 0.75 and 0.85, respectively. In face validity, impact scores for all items were reported as >1.5. Factor analysis led to the development of a 2-factor solution accounting for 71.4% of the observed variance. Reliability of the instrument using the calculation of the Cronbach's alpha coefficient was reported as 0.98 for the entire instrument. No statistically significant difference was reported between the pre and post-test scores of parental competence (p= 0.46). The Parental competence scale demonstrated acceptable psychometric properties.

Conclusion: The Parental competence scale demonstrated acceptable psychometric properties. Therefore, this scale can be used in future research and for educational and practical purposes with the aim of identifying parents' issues and improving the quality of life of parents of children with autism.

Keywords: Autism; Parents; Iran; Scale development; Competence

1. Introduction

Autism is a developmental disorder, which influences various aspects of the life of both children and their families(Shahidi, Heidary, & Mohammadpuor, 2015) Epidemiological studies on the prevalence of autism internationally have reported wide variation although increased rates are reported globally. The characteristics of this disorder impose physical, psychological and social pressures on the parents of children with autism (Safe, Joosten, & Molineux, 2012; Samadi & McConkey, 2011; Sarabi, Hassanabadi, Mashhadi, & Asghari 2011). Moreover mothers of children with autism have a lower level of overall health, more stress, less self-efficacy and parental competence than the parents of children with normal development and those with other types of developmental disorders (Herring et al., 2006; Pisula, 2007; Yamada et al., 2007). Therefore, recent studies have sought to find ways to reduce these challenges and pressures on the family, especially the mothers of autistic children (Mohammadi, Rakhshan, Molazem, & Zareh, 2018; Mohammadi, Rakhshan, Molazem, Zareh, & Gillespie, 2018; Stuart & McGrew, 2009), However, an important starting point is to assess parental perceptions of their parenting role.

In Iran, the challenges of caring for children with autism are beginning to be studied (Heidary, Shahidi, & Mohammadpuor, 2015; Samadi & McConkey, 2011; Sarabi J, et al., 2011; Shahidi, et al., 2015). They have shown that families, and especially mothers, have been neglected by healthcare services even though they require professional support (Samadi & McConkey, 2011; Samadi, McConkey, & Bunting, 2014; Shahidi, et al., 2015). Shahidi et al. (2015) found that better care for autistic children was a priority for mothers who tended to rely on spirituality to help their child in the absence of professional support (Shahidi, et al., 2015). Although Sarabi et al. (2011) showed that parental education and skill development did not increase self-efficacy among the parents of children with autism (رفرنس), Samadi et al., 2013 reported that group-based interventions did increase parental wellbeing and coping (Samadi, McConkey, & Kelly, 2013).

In these studies, the instruments used for assessing parental competence in parents of children with autism have been formats originally designed to evaluate parental competence in parents of healthy children or parents of children with other disorders (Samadi, McConkey, & Kelly, 2013و Sarabi Jamaeb et al. 2011). The Parenting Sense of Competence Scale and the Maternal Self-Efficacy

Scale are the most commonly used instruments to measure parental competence in autistic children's parents (Araceli Arellano Departamento Aprendizaje y Currículum, Facultad de Educación y Psicología, Universidad de Navarra, Pamplona, SpainCorrespondenceaarellanot@unav.es2017 Kuhn & Carter, 2006, Sarabi Jamaeb et al. (2011 و)Golden Gate Ballroom2017). Although these instruments are validated for use in the parents of children with autism(Samadi, McConkey, & Kelly, 2013و Sarabi Jamaeb et al. 2011), but the many behavioral-developmental problems of these children cause the parents of these children to experience extreme physical and emotional stress(mohammadi). Also, parental competence in these parents is affected by more factors than other parents (mohammadi). Therefore, there is a need for specific instrument to measure parental competence in these parents that is designed, according to the experiences of these parents in the care of children with autism.

Although a range of instruments have been devised internationally to gauge parent's perceptions of having a child with autism and the impact it has on them and the family, none has been developed specifically for the Iranian context with its emphasis on Islamic and traditional practices. The aim of the present study was to design and assess the psychometric properties of a culturally relevant instrument which Iranian practitioners could use as part of their assessment process and which would assist them with devising family-center supports to parents of children with autism.

2. Methods

A sequential exploratory approach was adopted using mixed-methods. In the first qualitative phase, interviews were conducted with 16 parents. A thematic content analysis identified the most salient themes and a questionnaire was devised. This questionnaire refined a panel of experts for Content validity. Then parents children with autism evaluated face validity and item analysis. Finally psychometric properties of a 25 item questionnaire using a five-point Likert scale was tested with 300 parents.

Ethical considerations

The institutional review board of the medical universities located in Southeast of Iran provided ethics approval (approval number: 95-01-08-1168). Also, at the beginning of each interview, the researcher introduced herself and explained the aim of this study. They were ensured that all

information would remain confidential and they could withdraw from the study at any time without any effect on their caring process.

2.1. Phase I. Instrument development

2.1.1. Qualitative study

Sixteen parents of children in public centers providing care for autistic children affiliated to the medical universities located in Southeast of Iran were selected through purposeful sampling. The criterion for inclusion were: Iranian nationality, speaking and understanding Persian and at least 6 months since a diagnosis of autism in their child. The participants included 10 mothers and 6 fathers. The mean of parents' age was 36.52 ± 2.37, with a range of 18 to 51 years. Most participating parents in this phase were married (80%) and had a secondary diploma (50%), a male child (65%), and an average monthly income equal to 200–300 US dollars.

In this phase, in-depth and semi-structured interviews were conducted face-to-face with the 16 parents. These took place in quiet environments by the first author. The individual interviews started with general questions such as: "What competencies do you need to care for your autistic child? ", "Are there situations that you felt incompetent for caring your autistic child?" Follow-up questions were used in order to increase and clarify the information, such as: "Can you explain more? Can you give me an example?" Based on parents' answers, other questions were asked to further probe other aspects of parenting. The interviews were audio -recorded and field notes were taken with the permission and awareness of the parents. Each interview lasted between 45 and 90 minutes.

Immediately after each interview, the interviews were listened to by the first author several times to have a general understanding and to identify the main insights provided. This preliminary analysis was done after each interview so that later interviews could be planned. The interviews continued until the data was saturated. Saturation occurs when there is no new category and the categories are saturated based on their characteristics and dimensions (Speziale, Streubert, & Carpenter, 2011).

The interview data were analyzed using content analysis. First each text was reviewed for immersion and acquiring insights and deep understanding of the phenomenon under study. Then,

the meaning units were determined that reflected parents' perceptions of parenting. Next, important points were extracted as open codes which were then categorized under broader titles based on their similarities, and the data analysis continued until the main themes were extracted (Elo & Kyngäs, 2008; Speziale, et al., 2011). In all 1011 codes were identified across the 16 interviews which were categorized into fifteen subcategories, six main categories, and two main themes which were the "restoration of family stability" and "excellence in child care" as shown in Figure 1.In order to ensure trustworthiness, the criteria proposed by (Graneheim & Lundman, 2004) were used.. Allocating sufficient time for data collection, prolonged engagement with the data, maximizing variation in sampling, negative case analysis and a team analysis approach using member check, external checks and peer checks

2.1.2. Questionnaire Development

Initially 55 possible items for the assessment tool were created from the qualitative data which were reflective of the main themes. Also, five further items were included based on the literature review, which led to an item pool with 60 items. Subsequently, the items were examined by the research team and 9 items were found to be similar and deleted from the items' pool. Therefore, an initial questionnaire with 51 items was designed in two dimensions: 'restoration of the family stability' (17 items) and 'excellence in care' (34 items). There are more codes in the excellence in care theme and these are often repeated by the parents in the interview .Therefore, there are more items in this them, than restoration of the family stability theme. An example of the items is presented in Table 1.

2.1.3. Content validity

Content validity was done with qualitative and quantitative approach. The sample size should be 10-12 participants for content validity (Waltz, Strickland, & Lenz, 2010). Content validity was undertaken with a panel of experts and panel of parents. Fifteen experts consisting of nurses, pediatricians and clinical psychologists reviewed the items in terms of vocabulary and grammar, comprehensions and relevance to the Iranian culture and context. They suggested that two items should be removed. The remaining 49 questions was entered into quantitative analysis of content validity using two indices: content validity ratio (CVR) and content validity index (CVI) (Waltz, Strickland, & Lenz, 2010). To do this, the instrument with was returned to the panel who were asked to assess the items in terms of usefulness and necessity to the study's topic. According to the Lawshe table, the acceptable CVR was reported as 0.46 (Ayre & Scally, 2014),

however four items had a CVR of 0.33 and were deleted. Next, the content validity index (CVI) was assessed for each item. The revised version of the instrument was returned to the panel who were asked to give each item a score in terms of relevance, simplicity and clarity using a five-point Likert scale ranging from 1 to 5. The CVI was calculated for each item and the whole instrument. In this study, CVI > 0.8 was considered appropriate (Waltz, Strickland, & Lenz, 2010) However six items had a score below this cut-off and these items were also deleted.

2.1.4. Face validity

The sample size was 10-12 participants in this phase (Waltz et al., 2010). The revised instrument with 39 items was then given to 30 parents of children with autism using the same inclusion criteria as for Phase 1. They were asked to assess each item in terms of difficulties, relevance, grammar and vocabulary, and intelligibility. The participants declared that the items were simple, clear and relevant to the study's topic. In addition, an impact score was calculated in which parents evaluated each item using a five-point Likert scale ranging from one (very little)to five (very much) with a score > 1.5 considered as acceptable (Waltz, et al., 2010). The impact score for all items was higher than 1.5. Therefore, no further items were deleted.

2.1.5. Item Analysis

Acceptable samples size for Item Analysis is 20 or more participants (Waltz et al., 2010).An instrument with 39 items was developed from the previous stage. 30 eligible parents rated themselves on the 39 items using a five-point Likert scale (from 1 = very low to 5 = very high). The correlation coefficient between each item and the total score was r>3, and Correlation coefficients between each item and other items score should be in the range of 0.3 <r <0.7 (Waltz et al., 2010). Among the questions that correlate more than 0.7, one question was selected by the research team. The correlation between all items and the total score was more than 0.30 in this study. But correlations coefficient between each item and other items had a range from 0.30 to 0.89. Therefore, between items had correlations more than 0.7 the most appropriate item according to the perspectives of the research team and experts was chosen and in this section 14 items were deleted. A shorter version of the questionnaire was created with 25 items, thereby making it more feasible for parents to complete. Figure 2 shows the diagram of the deleted items.

2.2. Phase II. Psychometric properties

2.2.1. Participants and data collection

300 parents of children with autism were recruited using a convenience sampling from four Autism Children's Association in two cities of Iran. Parents from the same family were not included in this study. The inclusion criteria were: diagnosed with autism in the last three months, no other physical or mental diseases, ability to read and write in Farsi and willingness to participate in the study. The participants' socio-demographic and clinical characteristics were also collected. Data was analyzed using descriptive and inferential statistics via the SPSS software, v. 19 (SPSS Inc, Chicago, Illinois, USA).

The mean of parents' age was 38.82±2.48, with a range of 18 to 51 years. Most participating parents in this phase were women (66.67%), married (64.67%) and had a secondary diploma (66.67%), a male child (61.67%), and an average monthly income equal to 200–300 US dollars. Also there was no significance difference by gender of the parent or of the child. However, college educated parents had more positive perceptions than those with primary education ($p<0.03$); married parents than those who were divorced or separated ($p<0.04$) and more affluent compared to less affluent parents ($p<0.04$).

2.2.2. Contrast validity (Exploratory factor analysis, **Convergent and Divergent validity)**

The sample size is construct validity for each item 5-10 participants (Waltz et al., 2010). Construct validity helped ensure that the instrument actually measured what was intended to measure (Waltz, et al., 2010) Exploratory factor analysis using the varimax rotation was used in this study. To achieve the most appropriate structure, eigenvalues higher than 1.0, factor loadings higher than 0.50 and so-called 'elbow criterion' regarding the eigenvalues were considered (Polit & Beck, 2013; Waltz, et al., 2010) To evaluate sample adequacy, the Kaiser–Meyer–Olkin (KMO) test and Bartlett's test were performed. For exploratory factor analysis, the KMO value had to be greater than 0.05. For convergent and divergent validity comparisons, the Pearson's correlation coefficients between the developed instrument and the parenting sense of competence scale and the child neglect questionnaire were calculated. Questionnaire has 46 questions in 4 dimensions physical, emotional, educational, and supervision neglect, that is useful for detecting

children at high risk for parental neglect (رفرمس) and parenting sense of competence scale is a questionnaire of 17 items with two dimensions" self-efficacy and satisfaction" that purpose this scale is to measure self-efficacy in parents of healthy children, but this scale has validity in children with autism (رفرمس).

Confirmatory Factor Analysis

Confirmatory Factor Analysis was done with 300 parent's children with autism that they are different of participants in exploratory factor analysis. Confirmatory Factor Analysis was conducted using AMOS 20 and several indices were used to assess the usefulness of the model. The following criteria need to be met: goodness of fit index (GFI) >0.90, root mean square error of approximation (RMSEA) with acceptance level of <0.08, Tucker Lewis Index (TLI) with acceptance level of >0.90,22 comparative fit index (CFI) with acceptance level of >0.90(Azami et al., 2018).

2.2.3. Reliability

Reliability of this instrument was assessed with the Cronbach's alpha coefficient and test–retest reliability. For internal consistency reliability, the Cronbach's alpha coefficient was calculated in 300 samples. the Cronbach's alpha coefficient > 0.7 was considered acceptable (Polit & Beck, 2013). For test–retest reliability, the intra class correlation (ICC) was calculated through collecting data from 60 parents with autism with a two-week interval.

3. Results

3.1. Contrast validity (Exploratory factor analysis, Convergent and Divergent validity)

Exploratory factor analysis using the varimax rotation identified two main factors as shown in Table 1. Which together explained 71.4% of the observed variance. The items' factor loadings ranged from 0.50 to 0.86. The two included factors were adapting with the present situation (9) and excellence in care (16) which broadly confirmed the main themes identified in the qualitative data. According to the Pearson's correlation, this instrument was significantly correlated with the parenting sense of competence scale indicating weak convergent validity (r = 0.54). Also,

this instrument was significantly correlated with the child neglect questionnaire indicating a lack of relationship or very small relationship with it, which approved its divergent validity (r = 0.04) (Table 2).

3.2. Confirmatory Factor Analysis

The result of CFA indicated one model with 2 factors 'restoration of the family stability' (9 items) and 'excellence in care' (16 items). 'Excellence in care' showed 0.95 correlation and 'restoration of the family stability' showed 0.92 correlation. Also there are 0.89 correlation between two factors. the chi- square of 558.43 (df = 85, P = 0.032) which showed poor fitness.in addition The GFI in the current study was 0.95 which shows the good fitting of the uni-dimensional model of the PTES construct. Further indices are tested in this model which are RMSEA = 0.03, CFI = 0.94, NFI = 0.93 and TLI = 0.94. All of the reported indices indicate that the extracted model is a good fitting one for the perceived therapeutic efficacy scale (Figure 3).

3.3. Reliability

The reliability of the questionnaire was assessed using Cronbach's alpha coefficient and test–retest reliability. The Cronbach's alpha coefficient of internal consistency across the 25 items instrument was 0.98 and for the two subscales of adapting with the present situation and excellence in care were 0.94 and 0.95, respectively (r = 0.90).The test–retest reliability of the questionnaire was calculated by inviting 60 parents to complete the questionnaire again after a two-week interval. The test-retest showed no statistically significant difference between pre- and post-test scores (p = 0.46). The correlations between the scores on the adapting with the present situation administration of the questionnaire between test–retest were 0.818 and the correlations between the scores on the excellence in care administration of the questionnaire between test–retest were 0.822. Finally, the correlation coefficient of the test–retest is 0.90, indicating the stability of the instrument.

4. Discussion

Parental competence from the perspective of the Iranian parents with autistic children was defined namely adaptation to the current situation, organization of family affairs, improvement of satisfaction in the family, development of self-confidence in child care, motivation in

caregiving and achievement of stability in the difficult path of child care. Then the instrument of parental competencies in Iranian parents with autistic children was designed and developed in this study. In this instrument, 80% of the items were designed and developed on the basis of parents' perspectives using a content analysis approach, 20% of them were based on literature review. It had 25 items and 2 dimensions of 'reconstruction 'the family stability' and 'excellence in care'. It was used to collect data from 300 Iranian parents of children with autism. Then psychometric properties of this instrument were assessed among these parents. Further, the CVR and CVI for this instrument were confirmed. Factor analysis led to two domains accounting for 71.38 percent of the observed variance. Confirmatory Factor Analysis also indicated that the overall structure of this questioner. Thus, this can confirm the ability of this questioner to assess parental competencies in Iranian parents of children with autism.in addition Confirmatory Factor Analysis was not done for other scales that were done used for assessing parental competence.

Study findings showed the restoration of family stability and achieve excellence in child care as two of the important aspects of parental competence. To restore family stability, parents with autistic children need to accept the illness of their children, patiently adapt to the psychological tensions associated with the illness, and attempt to obtain accurate information about the illness and how to give care to their afflicted children. Inanition when parents with autistic children accept the illness of their children and obtain necessary information for quality child care, they will be able to organize their interests and life schedules as well as the interests and plans of their ill children and other family members. Moreover, they will be able to improve the interactions of their ill children with family members and other people, improve satisfaction in their families, and create a calm and stable life. Others study reported that having an autistic child negatively affects their family members' personal and social lives, work, and marriage and therefore, parents need to adopt different strategies to minimize these effects with the help of other family members and healthcare professionals. Besides, they need adequate professional help, support, and counseling to adopt optimistic views about their lives and their autistic children (Myers, Mackintosh, & Goin-Kochel, 2009).

However, seven instruments of the parenting sense of competence scale, sense of competence scale of the parenting stress index, parenting scale, Parenting Self-Agency Measure, parental self-

efficacy scale, parental self-efficacy questionnaire and maternal efficacy questionnaire were used for assessing parental competence in parents of autistic children (Abidin, 1990; Gibaud-Wallston, 1977).رفرنس ها اضافه شود

Although these instruments are validated in parents of autistic children, but they are only designed and developed through literature review. While the instrument in this study, was designed and developed based on the inductive-deductive method according the experiences of parents of children with autism. This instrument was developed for assessing parental competence in Iranian parents of children with autism, considering the cultural characteristics of Iran is more appropriate. While a few questions were similar between instruments but the title and more questions of dimensions were different. This difference is probably due to differences in the meaning of parental competencies in Iranian parents of children with autism.

However, Parental competence is a concept related to the culture and all parents of the present study was Muslims and Iranians. They believe that they are responsible for the care of these children and if they do not care well about these children, they must be held accountable to God. Therefore, they stated that their religious beliefs are an important motive for caring for children. Inanition having a sick child in Iranian culture is a disgrace to the family and families suffer a lot of psychological stress. Some parents may hide their child and not interact with others. Hence, one important factor in having parental competence in parents of children with autism in Iranian culture is to overcome the psychological pressures due to having a sick child and develop their interactions with others. In addition it is believed that parental competencies in parents of children with autism are influenced by more factors than those in children with normal developmental (Safe, et al., 2012). Therefore, it is important that the parental competence in Iranian parents of children with autism is defined through the expression and description of these parents themselves. Then parental competence scale is designed in these parents through the experience parents children with autism. This instrument had appropriate CVR, CVI, EFA,CFA convergent, divergent validity and reliability. Although seven instruments are used for assessing parental competence in parents of autistic children have EFA and reliability but usually CVR, CVI, CFA and divergent validity are not reported for these instruments. It is likely that the instrument designed based on the participants' statements will have the potential to improve our

understanding of this phenomenon from the perspective of the Iranian parents with autistic children. Also it can help practitioners to better assess parental performance and identify their needs, and subsequently design supportive programs to enhance parental competence in these parents.

One of the limitations of the present study was that the participants in this study were only patients cared in public centers providing care for autistic children. The selection of participants from private centers providing care for autistic children could broaden the scope of our findings. Among other limitations of this study was gathering of information using individual interviews in qualitative study (phase I), while utilizing other methods of collecting information could lead to a richer outcome of this qualitative research. Therefore, it is recommended to conduct further studies on the parental competence in parents of children with autism in private centers providing care using other methods of gathering qualitative data such as observation and focus group in addition to the individual interviews. Given the fact that parental competencies are broad and multidimensional based on different contexts and cultures, more research should be done using the qualitative and quantitative designs to determine and evaluate factors affecting parental competencies among parents of children with autism. Also, the psychometric properties of this instrument in a larger population of parents of children with autism and in different cultures are suggested. In addition are suggested the psychometric properties of this instrument are evaluated for measuring parental competence in children with other developmental-behavioral disorders.

Conclusions

Parental competence of children with autism is a multidimensional and complex concept influenced by individual, family, social and cultural factors. On the other hand, awareness of factors influencing parental competencies in parents of children with autism is important for healthcare workers including nurses. Such an instrument is needed to assess parental competencies and identify parents' needs and problems for gaining and improving their competencies. Subsequently, the quality of care among these children can be improved. The instrument developed in this study demonstrated acceptable psychometric properties. Therefore, it can be used in future research and for educational and practical purposes with the aim of assessing parental competencies in children with autism. Because, this tool can help practitioners

to better assess parental performance and identify their needs, and subsequently design supportive programs to enhance parental competence in these parents and promote the quality of life of parents and children with autism.

Reference

Abidin, R. R. (1990). *Parenting Stress Index:(Short Form)*: Pediatric Psychology Press Charlottesville, VA.

Ayre, C., & Scally, A. J. (2014). Critical values for Lawshe's content validity ratio: revisiting the original methods of calculation. *Meas Eval Couns Dev, 47*, 79-86.

Azami, G., Lam, S. K., Shariff-Ghazali, S., Said, S. M., Aazami, S., Mozafari, M., & Taghinejad, H. (2018). Validation of the Iranian/Persian Version of the Perceived Therapeutic Efficacy Scale for Type 2 Diabetes. *Archives of Iranian Medicine (AIM), 21*.

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of advanced nursing, 62*, 107-115.

Gibaud-Wallston, J. (1977). Self-Esteem and Situational Stress: Factors Related to the Sense of Competence. *New Parents*.

Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse education today, 24*, 105-112.

Heidary, A., Shahidi, L. H., & Mohammadpuor, A. (2015). Spiritual Journey in Mothers' Lived Experiences of Caring for Children With Autism Spectrum Disorders. *Global Journal of Health Science, 7*, p79.

Herring, S., Gray, K., Taffe, J., Tonge, B., Sweeney, D., & Einfeld, S. (2006). Behaviour and emotional problems in toddlers with pervasive developmental disorders and developmental delay: associations with parental mental health and family functioning. *Journal of Intellectual Disability Research, 50*, 874-882.

Mohammadi, F., Rakhshan, M., Molazem, Z., & Zareh, N. (2018). Parental competence among parents with autistic children: A qualitative study. *Nursing and Midwifery Studies, 7*, 168-174.

Mohammadi, F., Rakhshan, M., Molazem, Z., Zareh, N., & Gillespie, M. (2018). Caregivers' perception of dignity in teenagers with autism spectrum disorder. *Nursing Ethics, 25*, 1-12.

Myers, B. J., Mackintosh, V. H., & Goin-Kochel, R. P. (2009). "My greatest joy and my greatest heart ache:" Parents' own words on how having a child in the autism spectrum has affected their lives and their families' lives. *Res. Autism Spectr. Disord, 3*, 670-684.

Pisula, E. (2007). A comparative study of stress profiles in mothers of children with autism and those of children with Down's syndrome. *Journal of Applied Research in Intellectual Disabilities, 20*, 274-278.

Polit, D., & Beck, C. (2013). Essentials of nursing research: Appraising evidence for nursing research. In: Baltimore: Lippincott Williams and Wilkins.

Safe, A., Joosten, A., & Molineux, M. (2012). The experiences of mothers of children with autism: Managing multiple roles. *Journal of Intellectual and Developmental Disability, 37*, 294-302.

Samadi, S. A., & McConkey, R. (2011). Autism in developing countries: Lessons from Iran. *Autism research and treatment, 2011*, 1-11.

Samadi, S. A., McConkey, R., & Bunting, B. (2014). Parental wellbeing of Iranian families with children who have developmental disabilities. *Research in developmental disabilities, 35*, 1639-1647.

Samadi, S. A., McConkey, R., & Kelly, G. (2013). Enhancing parental well-being and coping through a family-centred short course for Iranian parents of children with an autism spectrum disorder. *Autism, 17*, 27-43.

Sarabi J, Hassanabadi H, Mashhadi A, & Asghari N. (2011). The effectiveness of parent training on self-efficacy of mothers of children with autism. *The quarterly journal of fundamentals of mental health, 13(1)*, 84-93.

Shahidi, L. H., Heidary, A., & Mohammadpuor, A. (2015). *Lived experiences of mothers caring for children with Autism Spectrum Disorders:an exploratory of mixed study.* Unpublished PhD of Nursing, Mashhad University of Medical Sciences, Mashhad.

Speziale, H. S., Streubert, H. J., & Carpenter, D. R. (2011). *Qualitative research in nursing: Advancing the humanistic imperative*: Lippincott Williams & Wilkins.

Stuart, M., & McGrew, J. H. (2009). Caregiver burden after receiving a diagnosis of an autism spectrum disorder. *Research in Autism Spectrum Disorders, 3*, 86-97.

Waltz, C. F., Strickland, O. L., & Lenz, E. R. (2010). *Measurement in nursing and health research*: Springer publishing company.

Yamada, A., Suzuki, M., Kato, M., Suzuki, M., Tanaka, S., Shindo, T., Taketani, K., Akechi, T., & Furukawa, T. A. (2007). Emotional distress and its correlates among parents of children with pervasive developmental disorders. *Psychiatry and clinical neurosciences, 61*, 651-657.

Table 1. Varimax factor loadings of the items of the instrument (n =300)

Items	Factor 1	Factor 2
	Adapting with the present situation	Excellence in care
1- I have accepted my child's illness.	.823	
2- I am patient in dealing with my child.	.815	
3-I am patient with the words and behaviors of my child.	.812	
5- I can overcome my negative feelings and emotions.	.782	
6- I'm ashamed of my child's illness.	.764	
7- I feel relaxed as my wife and my relatives understand my circumstances.	.724	
8- I have peace of mind with reliance to God and prayer	.688	
9- I refer to the Autism Centers for children to provide better care to my child.	.644	
20- My beliefs motivate me to continue learning and caring for the child.	.545	
4- I try to get information about my child's illness and education from different people and resources.		.593
10- I am looking for financial support to improve my living conditions.		.691
11- I am pleased with myself for sustaining education and care to my child.		.659
12- I am successful in my role as a mother/father.		.755
13- As a wife, I perform my duties well.		.746
14- I look at my own desires and interests.		.733
15- I have been able to improve my child's relationship with other family members.		.720
16- My family members help me in my child care and education.		857
17- Love for my child increases my motivation to continue his/her education.		.825
18- Looking forward to my child's recovery, I continue his/her education.		.862
19- When my child learns something, I become more eager for her/his education.		.805
21- I can take care of my child well and create the right behavior in him/her.		.560
22- I believe that I can improve my child's future.		.724
23- Under any circumstances, I feel responsible for pursuing my child's education.		.705
24- For my child's education, I provide my child with the appropriate atmosphere and time.		.646
25- I treat seriously when teaching to create the right behavior in my child.		.636

Table 2. Convergent and divergent validity of the instrument with the parenting sense of competencies scale and child neglect questionnaire

Scale		**Parenting sense of competencies scale**	**Child neglect questionnaire**
	Pearson r	0.54	**0.04**
This instrument	p	<.03*	**<.02***

***Correlation is significant**

Table3. Parental Competence Scale for parents children with Autism					
1- I have accepted my child's illness.	Very Much	Much	Some times	Very Little	Little
2- I am patient in dealing with my child.					
3-I am patient with the words and behaviors of my child.					
5- I can overcome my negative feelings and emotions.					
6- I'm ashamed of my child's illness.					
7- I feel relaxed as my wife and my relatives understand my circumstances.					
8- I have peace of mind with reliance to God and prayer					
9- I refer to the Autism Centers for children to provide better care to my child.					
20- My beliefs motivate me to continue learning and caring for the child.					
4- I try to get information about my child's illness and education from different people and resources.					
10- I am looking for financial support to improve my living conditions.					
11- I am pleased with myself for sustaining education and care to my child.					
12- I am successful in my role as a mother/father.					
13- As a wife, I perform my duties well.					
14- I look at my own desires and interests.					
15- I have been able to improve my child's relationship with other family members.					
16- My family members help me in my child care and education.					
17- Love for my child increases my motivation to continue his/her education.					
18- Looking forward to my child's recovery, I continue his/her education.					
19- When my child learns something, I become more eager for her/his education.					
21- I can take care of my child well and create the right behavior in him/her.					
22- I believe that I can improve my child's future.					
23- Under any circumstances, I feel responsible for pursuing my child's education.					
24- For my child's education, I provide my child with the appropriate atmosphere and time.					
25- I treat seriously when teaching to create the right behavior in my child.					

445

446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466

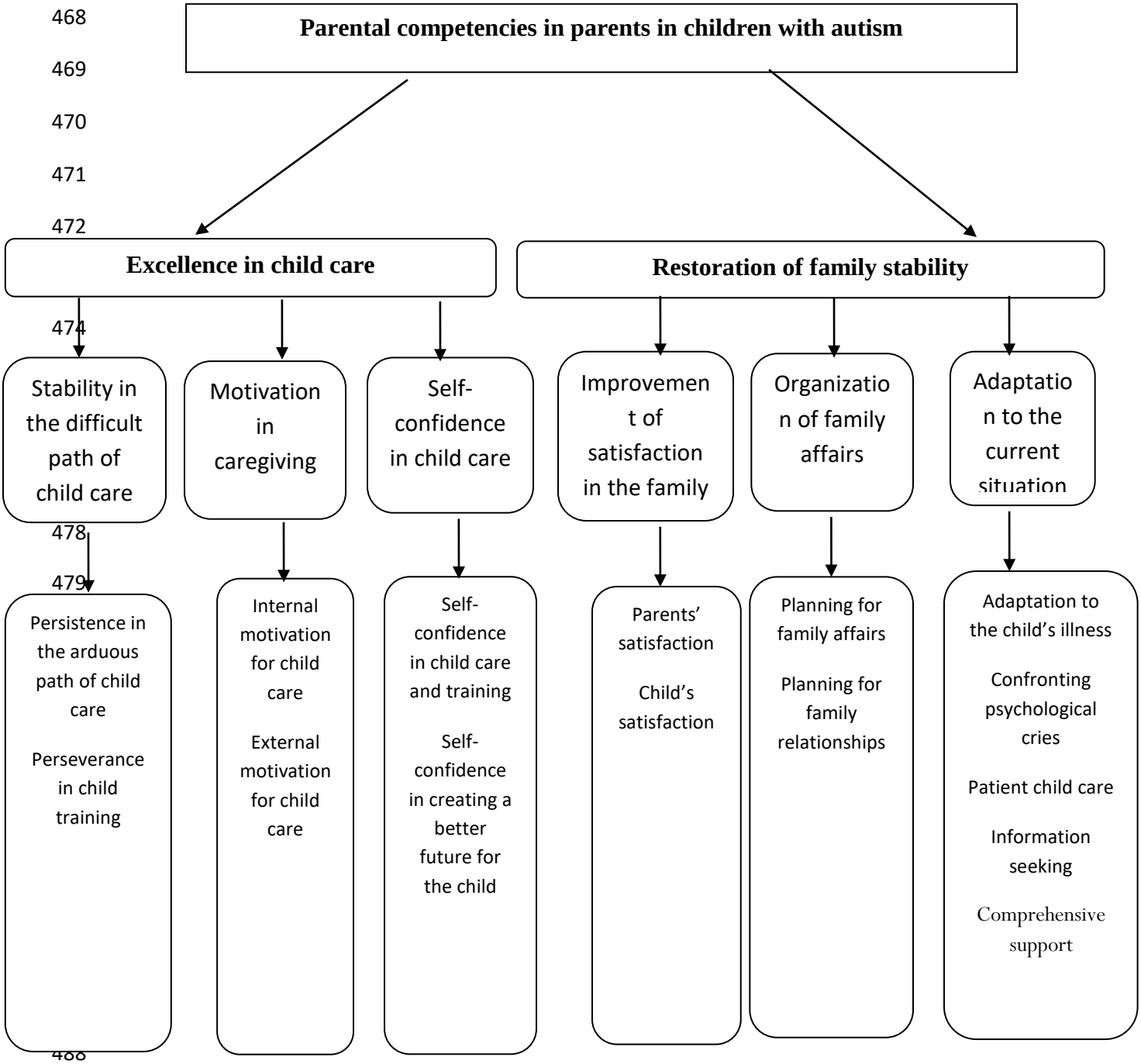

Figure1. The main themes and subthemes in parent's perceptions

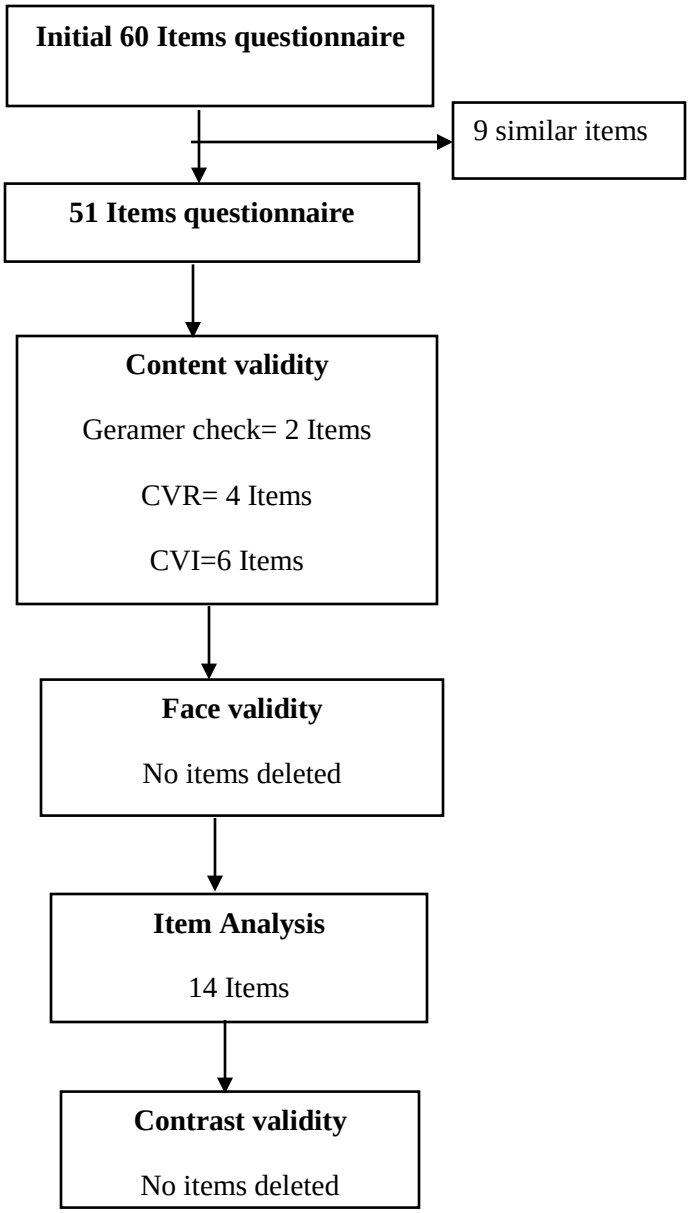

Figure2. Diagram of the deleted items

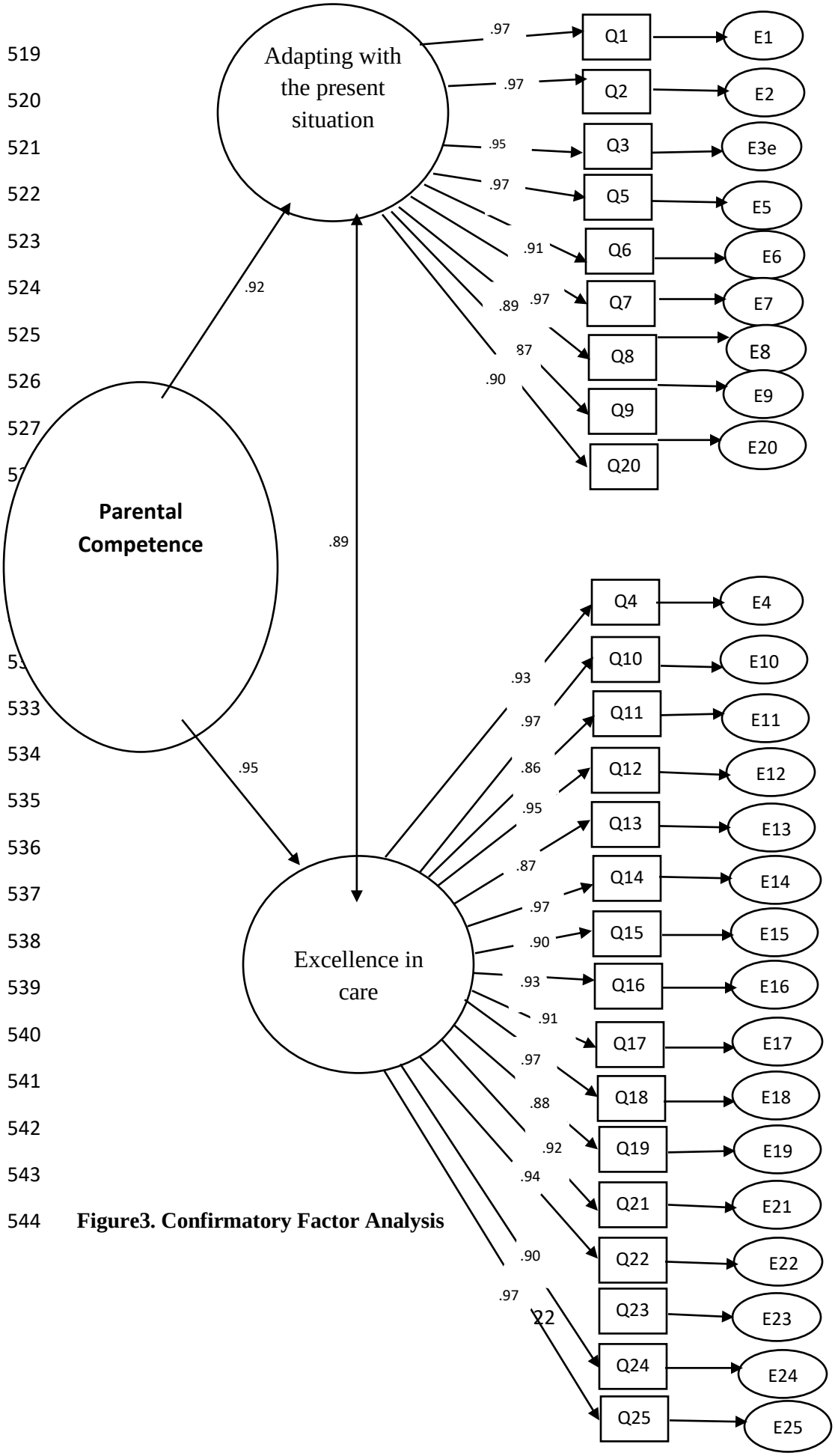

Figure3. Confirmatory Factor Analysis